



Cedar Rapids Police Department

Automated Traffic Enforcement Program

Primary Highway System

2020 Annual Report



CEDAR RAPIDS POLICE DEPARTMENT

AUTOMATED TRAFFIC ENFORCEMENT PROGRAM

2020 ANNUAL REPORT

INTRODUCTION

Automated Traffic Enforcement (ATE) is a significant safety countermeasure that the City of Cedar Rapids utilizes to enhance traffic safety. Speeding and red-light running are the most prevalent factors contributing to traffic crashes. Traffic crashes in high-risk locations pose a safety concern for first responders, as well as other motorists. The use of ATE systems result in measurable safety improvements in high-crash locations. Automated traffic enforcement systems are not intended to replace traditional traffic enforcement operations, but to provide an effective supplement. These systems also reduce the opportunity for bias-based policing by minimizing physical traffic stops. The information presented in this annual report will convey the considerable impact the ATE systems have had on roadway safety in the City of Cedar Rapids.

IMPACT OF AUTOMATED TRAFFIC ENFORCEMENT

The locations detailed in this annual report include three monitored intersections within the City of Cedar Rapids, as well as four locations along northbound and southbound Interstate 380. ATE cameras within the city monitor red-light and speed violations, while Interstate 380 ATE cameras only monitor speed violations. Crash data comparison from pre-camera period (May 2017-June 2019) to post-camera period (July 2019-December 2020) shows a measurable improvement in average crashes per month and crash severity while the ATE systems are active. Motorists braking due to an Automated Traffic Enforcement system was not listed as a contributing driver behavior. Based on the analysis of accident reports, the top three contributing factors for rear end collisions were following too close, failure to maintain control, and excessive speed. The following crash data summations detail the effectiveness of the ATE systems and highlight the necessity to continue utilizing these monitoring systems to promote safe driving habits and safe roadways.

CRASH DATA SUMMATION

Interstate 380 - All Monitored Locations

As indicated in Table 1.1, the average crashes per month from May 2017 to June 2019 was 3.69, which decreased to 2.89 average crashes per month from July 2019 to December 2020. Since the ATE cameras were reactivated in July 2019, zero fatal accidents have occurred at ATE monitored locations on I-380, and the average per month injury crashes decreased by 32%.

Table 1.1 Average number of crashes per month, pre and post camera activation

Average Number of Crashes per Month			
	Total Crashes	Injury	Property Damage
Pre-Camera (5/17 - 6/19)	3.69	1.15	2.42
Post-Camera (7/19 - 12/20)	2.89	0.78	2.11

Table 1.2 Total number of crashes on I-380 separated into categories based on severity of crash

Fixed Speed Cameras on Interstate 380 Personal Injury vs Property Damage vs Fatal Crashes					
	YEAR	Number of Crashes	Injury Crashes	Fatal Crashes	Property Damage Crashes
Pre-Camera Data	2007	54	21	0	33
	2008	67	32	1	35
	2009	69	32	2	37
	2010*	23	7	0	16
	TOTAL	213	92	3	121
Post-Camera Data	2010*	12	2	0	10
	2011	32	9	0	23
	2012	36	15	0	21
	2013	38	10	0	28
	2014	46	12	0	34
	2015	46	10	0	36
	2016	50	9	1	40
	2017*	8	1	0	7
	TOTAL	268	68	1	199
Pre - Camera Data **	2017*	29	8	0	21
	2018	35	11	0	24
	2019*	32	11	1	18
	TOTAL	96	30	1	63
Post-Camera Data	2019*	20	6	0	14
	2020	32	8	0	24
	TOTAL	52	14	0	38

*Data separated into pre and post camera activation for years where the ATE system was active a partial year

** In April 2017, Iowa District Court ruled that IDOT had authority to regulate Automated Traffic Enforcement on state maintained roadways. This caused the inactive period of May 2017 to June 2019. Subsequently, the Iowa Supreme Court reversed this ruling in January 2019, reactivating the use of Automated Traffic Enforcement on state maintained roadways in July 2019.

Table 1.3 Crash types, pre and post camera activation, with total speed violations issued on I-380

Fixed Speed Cameras on Interstate 380					
	Year	Number of Crashes	Crash Type		Speed Violations Issued
Pre-Camera Data	2007	54	20 - Non Collision 16 - Side Swipe	13 - Rear-End^ 4 - Other/Unknown	N/A
	2008	67	25 - Non Collision 20 - Side Swipe	13 - Rear-End^ 9 - Other/Unknown	N/A
	2009	69	19 - Non Collision 18 - Side Swipe	15 - Rear-End^ 17 - Other/Unknown	N/A
	2010*	23	12 - Non Collision 5 - Side Swipe	3 - Rear-End^ 0 - Other/Unknown	N/A
Post-Camera Data	2010*	12	3 - Non Collision 5 - Side Swipe	2 - Rear-End^ 2 - Other/Unknown	N/A
	2011	32	10 - Non Collision 10 - Side Swipe	8 - Rear-End^ 4 - Other/Unknown	91,966
	2012	36	14 - Non Collision 5 - Side Swipe	16 - Rear-End^ 1 - Other/Unknown	84,474
	2013	38	10 - Non Collision 15 - Side Swipe	11 - Rear-End^ 2 - Other/Unknown	86,050
	2014	46	24 - Non Collision 9 - Side Swipe	10 - Rear-End^ 3 - Other/Unknown	105,071
	2015	46	17 - Non Collision 2 - Side Swipe	6 - Rear-End^ 5 - Other/Unknown	131,242
	2016	50	14 - Non Collision 9 - Side Swipe	13 - Rear-End^ 14 - Other/Unknown	143,848
	2017*	8	2 - Non Collision 3 - Side Swipe	2 - Rear End^ 1 - Other/Unknown	N/A
Pre-Camera Data**	2017*	29	13 - Non Collision 6 - Side Swipe	9 - Rear-End^ 1 - Other/Unknown	N/A
	2018	35	16 - Non Collision 6 - Side Swipe	8 - Rear-End^ 5 - Other/Unknown	N/A
	2019*	32	16 - Non Collision 9 - Side Swipe	6 - Rear-End^ 1 - Other/Unknown	N/A
Post-Camera Data	2019*	20	7 - Non Collision 5 - Side Swipe	6 - Rear-End^ 2 - Other/Unknown	116,806
	2020	32	11 - Non Collision 11 - Side Swipe	9 - Rear-End^ 1 - Other/Unknown	163,516

*Data separated into pre and post camera activation for years where the ATE system was active a partial year

** In April 2017, Iowa District Court ruled that IDOT had authority to regulate Automated Traffic Enforcement on state maintained roadways. This caused the inactive period of May 2017 to June 2019. Subsequently, the Iowa Supreme Court reversed this ruling in January 2019, reactivating the use of Automated Traffic Enforcement on state maintained roadways in July 2019.

^ Crash data analysis reports the top three contributing factors for rear end collisions as following too close, failure to maintain control, and excessive speed.

1st Avenue & 10th Street East

As indicated in Table 2.1, the average crashes per month from May 2017 to June 2019 was 0.54 and decreased to 0.33 average crashes per month from July 2019 to December 2020. This is a 39% decrease in total crashes with a 48% decrease in property damage crashes since the activation of the cameras in July 2019.

Table 2.1 Average number of crashes per month, pre and post camera activation

Average Number of Crashes per Month			
	Total Crashes	Injury	Property Damage
Pre-Camera (5/17 - 6/19)	0.54	0.12	0.42
Post-Camera (7/19 - 12/20)	0.33	0.11	0.22

Angle oncoming, left turn crash types were prevalent at this intersection during pre-camera period May 2017 to June 2019. This crash type decreased to zero since the reactivation of the ATE cameras in July 2019. Refer to Table 2.2 for the reported crash types.

Table 2.2 Crash types, pre and post camera activation

Intersection: 1 st Avenue & 10 th Street East		
	Year	Crash Types
Post-Camera Data	2017*	1 - Broadside
	Year	Crash Types
Pre-Camera Data **	2017*	2 - Rear End^ 4 - Angle Oncoming, Left Turn 1 - Non-Collision 1 - Side Swipe, Same Direction
	2018	1 - Rear End^ 1 - Angle Oncoming, Left Turn
	2019*	1 - Broadside 2 - Rear End^ 1 - Angle Oncoming, Left Turn
	Year	Crash Types
Post-Camera Data	2019*	0 - Crashes
	2020	2 - Broadside 3 - Rear End^ 1 - Non-Collision

* Data separated into pre and post camera activation for years ATE system was active a partial year

** In April 2017, Iowa District Court ruled that IDOT had authority to regulate Automated Traffic Enforcement on state maintained roadways. This caused the inactive period of May 2017 to June 2019. Subsequently, the Iowa Supreme Court reversed this ruling in January 2019, reactivating the use of Automated Traffic Enforcement on state maintained roadways in July 2019.

^ Crash data analysis reports the top three contributing factors for rear end collisions as following too close, failure to maintain control, and excessive speed.

Table 2.3 Total number of crashes separated into categories based on severity of crash with total number of citations issued for each calendar year the ATE cameras were active

Intersection: 1st Avenue & 10th Street East						
	Year	Number of Crashes	Injury Crashes	Property Crashes	Red Light Violations Issued	Speed Violations Issued
Pre-Camera Data	2008	10	2	8	N/A	N/A
	2009	15	2	13	N/A	N/A
	TOTAL	25	4	21	N/A	N/A
Post-Camera Data	2010	6	1	5	N/A	N/A
	2011	4	0	4	293	491
	2012	12	0	12	541	374
	2013	9	2	7	412	663
	2014	13	3	10	696	1,252
	2015	9	3	6	700	1,593
	2016	5	2	3	811	2,101
	2017*	1	0	1	N/A	N/A
	TOTAL	59	11	48	3,453	6,474
Pre-Camera Data**	2017*	8	1	7	N/A	N/A
	2018	2	1	1	N/A	N/A
	2019*	4	1	3	N/A	N/A
	TOTAL	14	3	11	N/A	N/A
Post-Camera Data	2019*	0	0	0	610	7
	2020	6	2	4	847	2,774
	TOTAL	6	2	4	1,457	2,781

*Data separated into pre and post camera activation for years ATE system was active a partial year

** In April 2017, Iowa District Court ruled that IDOT had authority to regulate Automated Traffic Enforcement on state maintained roadways. This caused the inactive period of May 2017 to June 2019. Subsequently, the Iowa Supreme Court reversed this ruling in January 2019, reactivating the use of Automated Traffic Enforcement on state maintained roadways in July 2019.

1st Avenue & L Street West

As indicated in Table 3.1, the average crashes per month from May 2017 to June 2019 was 0.85 and decreased to 0.67 average crashes per month from July 2019 to December 2020. This is a 21% decrease in total crashes with a 32% decrease in property damage crashes since the activation of the cameras in July 2019.

Table 3.1 Average number of crashes per month, pre and post camera activation

Average Number of Crashes per Month			
	Total Crashes	Injury	Property Damage
Pre-Camera (5/17 - 6/19)	0.85	0.12	0.73
Post-Camera (7/19 - 12/20)	0.67	0.17	0.50

Rear end crash type average per month was 0.35 during pre-camera period May 2017 to June 2019. Upon reactivation of the ATE cameras, this decreased to an average per month of 0.17, which is a 51% decrease. Refer to Table 3.2 for the reported crash types.

Table 3.2 Crash types, pre and post camera activation

Intersection: 1 st Avenue & L Street West		
	Year	Crash Types
Post-Camera Data	2017*	1 - Broadside
	Year	Crash Types
Pre-Camera Data**	2017*	3 - Rear End^
	2018	3 - Broadside 4 - Rear End^ 2 - Angle Oncoming, Left Turn 2 - Improper Turn, Left 1 - Side Swipe, Same Direction 1 - Non-Collision
	2019*	1 - Broadside 2 - Rear End^ 3 - Improper Turn, Right
	Year	Crash Types
Post-Camera Data	2019*	1 - Rear End^ 2 - Angle Oncoming, Left Turn 1 - Improper Turn, Right 2 - Side Swipe, Same Direction
	2020	2 - Rear End^ 1 - Angle Oncoming, Left Turn 2 - Improper Turn - Right 1 - Improper Turn - Left

*Data separated into pre and post camera activation for years ATE system was active a partial year

** In April 2017, Iowa District Court ruled that IDOT had authority to regulate Automated Traffic Enforcement on state maintained roadways. This caused the inactive period of May 2017 to June 2019. Subsequently, the Iowa Supreme Court reversed this ruling in January 2019, reactivating the use of Automated Traffic Enforcement on state maintained roadways in July 2019.

^ Crash data analysis reports the top three contributing factors for rear end collisions as following too close, failure to maintain control, and excessive speed.

Table 3.3 Total number of crashes separated into categories based on severity of crash with total number of citations issued for each calendar year the ATE cameras were active

Intersection: 1st Avenue & L Street West						
	Year	Number of Crashes	Injury Crashes	Property Crashes	Red Light Violations Issued	Speed Violations Issued
Pre-Camera Data	2008	19	4	15	N/A	N/A
	2009	11	2	9	N/A	N/A
	TOTAL	30	6	24	N/A	N/A
Post-Camera Data	2010	20	3	17	N/A	N/A
	2011	10	1	9	400	476
	2012	6	1	5	929	578
	2013	9	3	6	647	586
	2014	8	2	6	428	561
	2015	15	3	12	447	760
	2016	18	2	16	417	883
	2017*	1	0	1	N/A	N/A
	TOTAL	87	15	72	3,268	3,844
Pre-Camera Data**	2017*	3	1	2	N/A	N/A
	2018	13	0	13	N/A	N/A
	2019*	6	2	4	N/A	N/A
	TOTAL	22	3	19	N/A	N/A
Post-Camera Data	2019*	6	3	3	531	429
	2020	6	0	6	1,206	922
	TOTAL	12	3	9	1,737	1,351

*Data separated into pre and post camera activation for years ATE system was active a partial year

** In April 2017, Iowa District Court ruled that IDOT had authority to regulate Automated Traffic Enforcement on state maintained roadways. This caused the inactive period of May 2017 to June 2019. Subsequently, the Iowa Supreme Court reversed this ruling in January 2019, reactivating the use of Automated Traffic Enforcement on state maintained roadways in July 2019.

Williams Boulevard SW & 16th Avenue SW

As indicated in Table 4.1, the average crashes per month from May 2017 to June 2019 was 0.61 and decreased to 0.44 average crashes per month from July 2019 to December 2020. This is a 29% decrease in total crashes with a 100% decrease in injury crashes since the activation of the cameras in July 2019.

Table 4.1 Average number of crashes per month, pre and post camera activation

Average Number of Crashes per Month			
	Total Crashes	Injury	Property Damage
Pre-Camera (5/17 - 6/19)	0.62	0.15	0.46
Post-Camera (7/19 - 12/20)	0.44	0.00	0.44

Rear end crash type average per month was 0.31 during pre-camera period May 2017 to June 2019. Upon reactivation of the ATE cameras, this decreased to an average per month of 0.17, which is a 45% decrease. Refer to Table 4.2 for the reported crash types.

Table 4.2 Crash types, pre and post camera activation

Intersection: Williams Boulevard & 16 th Avenue SW		
	Year	Crash Types
Post-Camera Data	2017*	3 - Rear End^ 1 - Angle Oncoming, Left Turn
	Year	Crash Types
Pre-Camera Data**	2017*	3 - Rear End^ 1 - Angle Oncoming, Left Turn
	2018	5 - Rear End^ 4 - Angle Oncoming, Left Turn 2 - Side Swipe, Same Direction
	2019*	1 - Side Swipe, Same Direction
	Year	Crash Types
Post-Camera Data	2019*	2 - Rear End^ 1 - Angle Oncoming, Left Turn
	2020	1 - Rear End^ 4 - Angle Oncoming, Left Turn

*Data separated into pre and post camera activation for years ATE system was active a partial year.

** In April 2017, Iowa District Court ruled that IDOT had authority to regulate Automated Traffic Enforcement on state maintained roadways. This caused the inactive period of May 2017 to June 2019. Subsequently, the Iowa Supreme Court reversed this ruling in January 2019, reactivating the use of Automated Traffic Enforcement on state maintained roadways in July 2019.

^ Crash data analysis reports the top three contributing factors for rear end collisions as following too close, failure to maintain control, and excessive speed.

Table 4.3 Total number of crashes separated into categories based on severity of crash with total number of citations issued for each calendar year the ATE cameras were active

Intersection: Williams Boulevard & 16th Avenue SW						
	Year	Number of Crashes	Injury Crashes	Property Crashes	Red Light Violations Issued	Speed Violations Issued
Pre-Camera Data	2008	13	3	10	N/A	N/A
	2009	14	6	8	N/A	N/A
	TOTAL	27	9	18	N/A	N/A
Post-Camera Data	2010*	8	3	5	N/A	N/A
	2011	6	1	5	425	1,107
	2012	7	0	7	509	1,101
	2013	5	0	5	637	1,322
	2014	6	0	6	379	985
	2015	9	1	8	373	1,355
	2016	7	2	5	434	1,400
	2017*	4	0	4	N/A	N/A
	TOTAL	52	7	45	2,757	7,270
Pre-Camera Data**	2017*	4	1	3	N/A	N/A
	2018	11	3	8	N/A	N/A
	2019*	1	0	1	N/A	N/A
	TOTAL	16	4	12	N/A	N/A
Post-Camera Data	2019*	3	0	3	103	100
	2020	5	0	5	351	303
	TOTAL	8	0	8	454	403

*Data separated into pre and post camera activation for years ATE system was active a partial year

** In April 2017, Iowa District Court ruled that IDOT had authority to regulate Automated Traffic Enforcement on state maintained roadways. This caused the inactive period of May 2017 to June 2019. Subsequently, the Iowa Supreme Court reversed this ruling in January 2019, reactivating the use of Automated Traffic Enforcement on state maintained roadways in July 2019.

CITATION TOTALS

The following table displays the total red-light and speed citations at each of the reported monitored locations for all calendar years the ATE cameras have been active.

Table 5 Combined total of speed and red-light citations issued all calendar years ATE cameras were active

CITATION TOTALS								
	2011	2012	2013	2014	2015	2016	2019*	2020
STATIONARY CAMERAS								
1st Avenue & 10th Street	784	915	1,075	1,948	2,293	2,912	617	3,621
1st Avenue & L Street	846	1,507	1,233	989	1,207	1,300	960	2,128
Williams Boulevard & 16th Street SW	1,532	1,610	1,959	1,364	1,728	1,834	203	654
INTERSTATE 380 STATIONARY CAMERAS								
Diagonal Drive SW Northbound	9,190	10,109	4,218	8,249	10,775	12,161	10,831	17,492
J Avenue Northbound	36,775	35,327	36,069	39,402	62,016	73,217	49,568	70,310
J Avenue Southbound	44,775	38,052	44,529	56,650	57,265	56,879	55,206	74,162
1st Avenue West Southbound	1,226	986	1,234	770	1,186	1,591	1,201	1,552

* 2019 totals reflect ATE cameras issuing citations 7/01/2019 to 12/31/2019

ATE SYSTEM CALIBRATION

- Sensys Gatso conducted annual calibration of each monitored lane of northbound and southbound Interstate 380 between the dates of October 12, 2020 and October 13, 2020.
- The Cedar Rapids Police Department conducted quarterly calibration verification for all reported ATE systems on the following dates:
 - September 2019
 - February 2020
 - June 2020
 - September 2020
 - November 2020
 - February 2021